CLAIMS

1. A hot-switchable voltage bus for IDDQ measurement, comprising:

a global voltage bus (108);

a quiescent voltage bus (112), separate from the global voltage bus;

at least one voltage island (V1, V2, ..., Vn); and

a system (102, 104) for selectively connecting each voltage island to the quiescent and global voltage busses during IDDQ testing.

2. The hot-switchable voltage bus of claim 1, wherein the system for selectively connecting is configured to hot-switch each voltage island between the quiescent and global voltage busses.

3. The hot-switchable voltage bus of claim 2, wherein each voltage island does not lose state during the hot-switching between the quiescent and global voltage busses.

4. The hot-switchable voltage bus of claim 2, further comprising a global power supply (106) for supplying a voltage VDDg to the global voltage bus and a quiescent power supply (110) for supplying a voltage VDDq to the quiescent voltage bus.

5. The hot-switchable voltage bus of claim 4, wherein VDDg is equal to VDDq.

6. The hot-switchable voltage bus of claim 5, wherein the IDDQ measurement is performed independently for VDDg and VDDq.

7. The hot-switchable voltage bus of claim 1, wherein the system for selectively connecting comprises a header device (H1, H2, ..., Hn; H1q, H2q, ..., Hnq) for selectively connecting each voltage island to the quiescent and global voltage busses in response to a control signal.

8. The hot-switchable voltage bus of claim 1, further comprising a plurality of voltage sensors (214).

9. A method for IDDQ testing, comprising:

hot-switching at least one voltage island (V1, V2, ..., Vn) between a global voltage bus (108) and a quiescent voltage bus (112); and

performing IDDQ testing on the at least one voltage island.

10. The method of claim 9, wherein each voltage island does not lose state during the hot-switching between the quiescent and global voltage busses.

11. The method of claim 9, further comprising:

supplying (106) a voltage VDDg to the global voltage bus; and

supplying (110) a voltage VDDq to the quiescent voltage bus.

12. The method of claim 11, wherein VDDg is equal to VDDq.

13. The method of claim 9, wherein hot-switching further comprises:

providing a connection (H1, H2, ..., Hn; H1q, H2q, ..., Hnq) between each voltage island and the global and quiescent voltage busses; and

selecting at least one of the connections to connect each voltage island to at least one of the global and quiescent voltage busses.

14. The method of claim 13, wherein each connection includes a header device (H1, H2, ..., Hn; H1q, H2q, ..., Hnq), and wherein each connection is selected by activating the header device of the connection via a control signal.

15. The method of claim 9, wherein performing IDDQ testing comprises:

applying a test pattern (120) to each voltage island, wherein the test pattern remains valid during hot-switching between the global and quiescent voltage busses.

16. The method of claim 9, further comprising:

hot-switching different sets of voltage islands between the global and quiescent voltage busses.

17. The method of claim 9, further comprising:

locating IDDQ defects using a resistance of the quiescent voltage bus.

18. The method of claim 9, wherein IDDQ testing is performed on individual voltage islands or sets of voltage islands.

19. The method of claim 9, further comprising:

obtaining IDDQ measurements from individual voltage islands or sets of voltage islands during the IDDQ testing; and

comparing the obtained IDDQ measurements to other IDDQ measurements.

20. The method of claim 19, wherein the obtained IDDQ measurements are compared to IDDQ measurements for similar circuitry, or wherein the obtained IDDQ measurements are compared to an average IDDQ measurement.

21. A method, comprising:

hot-switching at least one voltage island (V1, V2, ..., Vn) between a plurality of different voltage busses (108, 112), wherein each voltage island does not lose state during the hot-switching.

22. The method of claim 21, wherein each voltage bus provides a same voltage.

23. The method of claim 21, further comprising:

locating IDDQ defects in the at least one voltage island.

24. The method of claim 21, wherein the voltage busses comprise power supply busses or ground busses.

25. A method for monitoring power consumption, comprising:

connecting at least one voltage island (V1, V2, ..., Vn) to a quiescent voltage bus (112); and

monitoring power usage at a VDDq power supply (110) connected to the quiescent voltage bus for the at least one voltage island.